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A CASE OF LEFT LATERAL HOMONYMOUS HEMIANOPIA.

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The following case has several points of sufficient clinical interest to make its presentation require no apology.

L. A. B., æt. 40, American, physician, married, is of small size, sparely built, and of blond complexion. Until September 1884, had been healthy. Denies ever having had syphilis, occasionally drank, but was not intemperate, used tobacco moderately.

On the first of September, 1884, after an ordinary day's work, during which, however, he had taken some beer, he had a sudden attack of illness, of which he gives the following history:

After retiring at night, and during coition with his wife, he was suddenly attacked with a sharp, severe pain in one side of his head, the right he thinks, in the temporo-frontal region and in the eye-ball itself.

Within five or ten minutes he was seized with purging and vomiting, and while sitting on the chamber, thinks he became unconscious, and does not remember anything that occurred for a week or ten days afterward, except that he had very severe

pain in the front of his head and eye. From this time he gradually improved, so that the pain subsided entirely after six weeks or two months, and has never returned since.

His attending physician, who saw him the morning following the attack, corroborates the above account, except with reference to the unconsciousness. At no time was he unconscious, but was quite delirious, it sometimes being difficult to restrain him. His temperature was slightly elevated for a time, his pulse somewhat accelerated, but no decided febrile symptoms were noted. The marked mental disquietude continued for some two or three months, then gradually became less pronounced, but some disturbance has remained until quite recently, and his physician still thinks he is not quite his former self. At no time have there been paralytic or hemianæsthetic manifestations, except thinks there has been some "thickness of speech." His conversation gives no evidence of this at present. During the time of acute illness the only symptom noticed about his eyes was the severe pain in and about the right one. When he began to read again, however, and to go about, he noticed that in reading or writing, a portion of the word would not be seen, and, in walking about, objects to his left side were not distinguished. This condition has not changed since, and it was on this account that he applied for an examination, which was made June 17, 1886.

His condition was noted as follows: General health fair, but nervous and "fidgety." Is able to do his professional work well, has no noticeable disturbance except his inability to see objects to the left side of the fixation point. In each eye $V=\frac{6}{VI}$, accommodation good, can read an indefinite time without discomfort, except what is due to loss of portions of the words. The ophthalmoscope shows both eyes normal and emmetropic, but a deep physiological cup in the left, no changes in the discs or retinæ discoverable. Vessels normal in size aud appearance. The field of vision was taken on Prof. McHardy's perimeter, for white, blue, red and green, the test objects being one cm. in diameter. This shows the entire left half of the field of each eye to be wanting, a vertical line about one inch (? Editor) to the left of the fixation point marking the boundary between vision and

blindness. In addition to this, the left eye shows some concentric contraction of the remaining field for all colors, and the right, slight contraction for red and green. Pupils have been and are normal in size and reaction, patella—reflex normal, and no evidence of any disturbance of nerve centers, other than those above indicated.

Although vision was not tested during the time of the acute illness, it is more than probable that the loss of the left half of the field of vision has existed from the beginning, as he complained of the same difficulty in reading and walking about, as soon as he recovered sufficiently for either, and there has been no increase in the trouble manifest to the patient himself since.

The interesting clinical questions here, are: What has been the lesion and where is it located?

In looking up the limited amount of literature on the subject of hemianopia at my disposal, I find the causes and seat of the lesion are various. Wolfe[1] states that in the great majority of cases it is due to hæmorrhage, and usually is accompanied with paralysis. It is also often due to tumors, syphilis, and to traumatic causes such as fracture of the skull. Emboli also frequently produce it.

According to the theory of the partial decussation of the optic nerves, it is evident that the lesion must be located behind the chiasm in the course of the optic nerves, but post mortem examinations have variously placed the lesion in the optic tract, the posterior part of the thalamus opticus, the occipital lobe of the brain, etc.

Dr. Seguin[2] reports a case of sudden left lateral hemianopia, accompanied with numbness of one side, passing off shortly. An autopsy, later on, showed an old spot of yellow softening, involving the greater part of the right cuneus, etc., and was due to blocking of the occipital artery. Wilbrandt[3] reports a case of

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1 Diseases of the Eye, page 299.

2 *Medical News*, November 14, 1885, page 553.

3 *Arch. fuer Ophthal.*, XXXI. 3.

sudden right lateral hemianopia, incomplete at first but becoming absolute shortly, followed several weeks later by apoplexy and hemiparesis. Three years later patient suicided, and autopsy showed disease of the left occipital lobe of the brain.

A case is reported in Ziemssen's[1] Encyclopædia, in which a post-mortem showed plugging of the artery of the left fossa of Sylvius. There were hemiparesis and aphasia in addition to the hemianopia.

It[2] has been determined that behind the sulcus Rolandi lies a spot in the cortex, injury to which produces lateral hemianopia.

Hirschberg[3] reports a case of right-sided hemianopia with perfect central vision, with no paretic symptoms at first, followed, however, by aphasia and right hemiplegia. Autopsy showed large tumor, causing atrophy of the left optic tract.

Thompson and Keen's case of gunshot wound of occipital lobe of the brain was one of hemianopia without other apparent lesion.

Hughlings-Jackson and Gowers[4] relate a case of double left hemianopia with hemianæsthesia and hemiplegia of the same side. Post-mortem showed disease of the posterior part of the right thalamus opticus.

Curshmann[5] reports a case of complete left hemianopia, in which autopsy disclosed disease of the right occipital lobe.

So far as I am able to discover, cases of homonymous lateral hemianopia without paretic symptoms at some period of their history, are rare, and in those cases I have found the lesion has been in the occipital lobe of the brain, on the side opposite to that of the hemianopia.

Dr. Alt[6] reports a case of right sided hemianopia, incomplete at first, but becoming absolute in a few days. This was the

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1 Encyclopædia Vol. XII. page 796.

2 Ziemssen's Encyclopædia Vol. XII. page 796.

3 *Virch. Arch.*, Bd. LXV.

4 R. L. O. H. R. Vol. VIII. page 330.

5 *Centralblatt f. Augenheilkunde*, 1879, page 256.

6 *Amer. Jour. Ophthal.*, Vol. I. page 39 et seq.

result of a blow on the left side of the head, behind the ear, received several weeks previously, and which was followed by an abscess of the middle ear, with the general symptoms of "loss of memory for words," dizziness, difficulty in walking, etc.

Ophthalmoscopic symptoms negative. A post-mortem several weeks afterwards disclosed a large pus cavity at the site of the injury, between the dura-mater and the cranium. There was also an abscess in the substance of the left occipital lobe of the brain close to the angular gyrus.

Dr. Norris[1] from a careful study of the case of gunshot wound reported by Keen and Thompson, and from his observations in the laboratory of Stricker, concludes that cortical lesions of the occipital lobes produce hemianopia.

This conclusion, also, agrees with Munck, who places the visual centres in the occipital lobes, and states that a lesion of one occipital lobe will produce hemianopia of the opposite side. These conclusions are in accordance with the theory of the partial decussation of the optic nerves, a theory, however, which is not accepted by all good observers, but nevertheless, the weight of authority seems to be in its favor.

Taking into consideration the clinical features of our case, in conjunction with those reported and the results of repeated autopsies, the indications seem to point pretty clearly to a lesion, perhaps an embolus, of the right occipital lobe of the brain. On this supposition, however, there is one symptom not easily understood, viz., the reference of severe pain to the orbital region, and the eyeball of the right side. Can this be explained on the general principle that an irritation of a nerve is referred to its terminal extremity?

If this were true, why should it not be referred to the left eye as well as to the right, if the theory of the partial decussation of the optic nerve is a correct one?

Another possible explanation which suggests itself, is, might not there have been an optic neuritis of sufficient severity to produce the symptoms, and the infiltration have been subsequently absorbed away before any permanent nerve lesion was induced.

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1 Pepper's System of Medicine, Vol. IV. page, 778.

We[1] know that very great œdema of the optic nerve may take place and disappear so rapidly as not to affect the vision permanently or leave distinct ophthalmoscopic evidences afterwards. None of my text books, or the cases I find reported, refer to this symptom of pain in the eye. Of course only an autopsy could determine definitely the nature and seat of the lesion.

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1 Gower's Medical Ophthalmoscopy, pages 47—56.

REFERENCE CHART OF THE FIELD OF VISION.

BY JAMES L. MINOR, M. D., MEMPHIS, TENN.

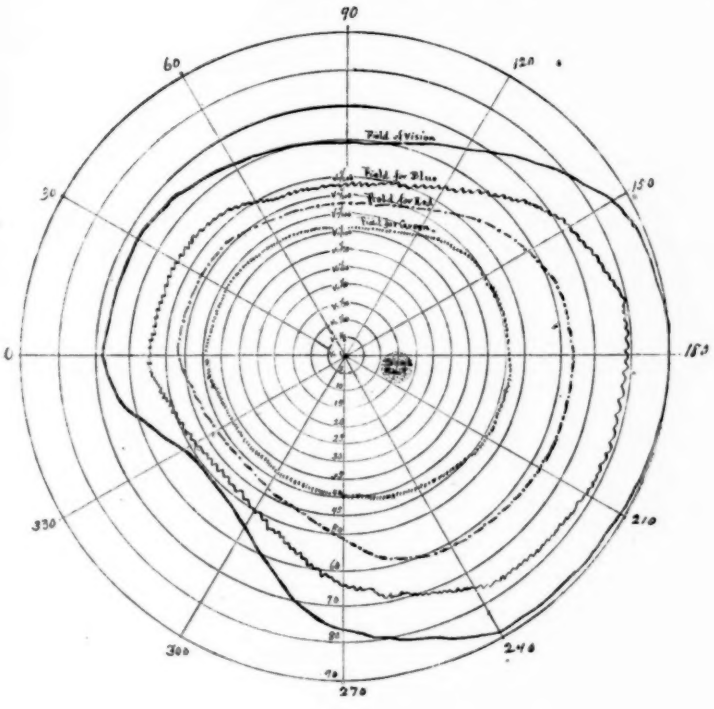

FIG. 18.

Map of normal Field of Vision for Right Eye. The limit of the Zone possessing $V=\frac{1}{c\,c}$ *is irregular; it extends to* 50° *on the temporal, and to* 40° *on the nasal side.*

The accompanying chart, which furnishes a *bird's-eye view* of the functions of the healthy retina, has been very useful in my hands for the past two years, and will, I think, prove equally so to other members of the profession. It is convenient for reference when a careful study of the field of vision is undertaken; and not infrequently it serves as a stimulus to a more

critical examination than would otherwise be accorded. It is too much the custom to note only the areas of absolute blindness in the field of vision, while simple diminution of central or peripheral vision, or its limitation in certain areas of the field are entirely overlooked; and thus much important information is lost. The cut explains itself. It is simply a chart for recording perimetric measurements of the field of vision, upon which are outlined the normal limits of the field for objective perception, and for the perception of the three primary colors, and, besides this, the amount of vision possessed by the different zones of the retina, appears at intervals of every five degrees from the centre. The test objects for measuring eccentric vision may be easily made, by drawing on slips of white paper two or more black squares, representing in measurement, cross sections of the limbs of Snellen's test-letters, and numbering them according to the same notation. The radius of curvature of the perimeter should be one foot, the *unit* of measurement of vision in general use. *Accuracy* has been sacrificed to *symmetry*, in making it appear that the zone possessed of $V=\frac{1}{c\,c}$, is co-extensive in all of the different meridians. The real limit of this zone is irregular. It extends to 50° on the temporal and to 40° on the nasal side; no attempt is made to show this on the chart, for it is thought that it will be easier to *bear this in mind* than to make it *appear in the cut*, which is *schematic* only.

THE AMERICAN OPHTHALMOLOGICAL SOCIETY.

[CONCLUDED FROM PAGE 263.]

AFTERNOON SESSION.

The first paper of the afternoon session was a report of 263 cases of cataract extraction with particular reference to the after-treatment, by George Strawbridge, M. D., of Philadelphia.

Two hundred and twenty-three of the above cases had never been reported. The operation was performed by the modified flap extraction in which the incision lies mid-way between the old Graefe incision and the corneal flap incision. It avoids the risks of both of these methods, and gives a sufficiently large opening. An iridectomy in an upward direction was always performed. Formerly the lens was removed by pressure with the spoon directly on the cornea, but fearing injury to this structure, pressure with the finger on the eye-lid has been substituted. The results had been as follows: successful cases, 85.2 per cent, partial successes, 8.1 per cent, and failures, 6.7 per cent. Those cases were classed as failures in which fingers could not be counted at a distance of one or two feet. In twelve cases absolute loss of the eye occurred. Eleven were lost by choroiditis, and one by choroidal hæmorrhage.

After the operation the eye was thoroughly cleansed, and for the past two years a solution of boracic acid (two per cent) had been employed. The speaker's former plan had been, after applying a bandage, to put the patients to bed in a darkened room, keeping them in bed for from four to six days. Two-thirds of the cases had been treated in this way, but he had found this plan exceedingly debilitating in elderly individuals, and during the past eighteen months he had gradually given up this plan, so that now the patients were, practically speaking, kept in bed only twenty-four hours in a room as light as any ordinary room. The first element in the treatment of old people is to make them comfortable. If at the end of twenty-four hours everything is doing well, the patient is allowed to move about the room. No unsatisfactory result had followed this plan.

The speaker had employed in some cases cocaine. In one case in which a four per cent solution was used, a violent purulent inflammation began within twenty-four hours, and resulted in total loss of the eye. Subsequently, he had employed cocaine without any unpleasant results. His plan is to use a two per cent solution, drop in one drop, wait a minute, and drop in a second drop, and use only two drops. As much anesthesia as is desirable is thus obtained. He had never employed any antiseptic except the two per cent solution of boracic acid, and while this does no harm, he thought that it did little good.

He attaches much importance to stimulation after the operation, and in elderly people, the use of whisky is begun a few hours after the operation.

Cataract Extraction Without Iridectomy.

BY DR. H. KNAPP, OF NEW YORK.

Of the new operative measures which he had seen in Europe, there were two which he thought particularly worthy of trial; one was extraction without iridectomy, and the other, advancement of Tenon's capsule. Of the fourteen cataract extractions which he had made since his return, the last six had been without iridectomy. Three of these had made ideal recoveries, no reaction, clear central movable pupil, neither an anterior nor a posterior synechia. The other three had more or less posterior synechiæ, leaving the pupil ragged and somewhat obstructed; yet the adhesions were simple, not spreading a pseudo-membrane over the area of the pupil. Vision was fair, and could be rendered excellent by a simple needling, if remaining insufficient.

He followed Panas in the performance of the operation; large section along the upper margin of the cornea, free laceration of the capsule, expulsion of the cataract and its remnants, reduction of the iris with probe, if it did not occur spontaneously. Before the operation the eye is fully cocainized, the lids and conjunctival sac washed and sterilized. The instruments are treated in the same way. After the expulsion of the lens, a small quantity of an antiseptic is injected into the anterior chamber along the whole section, and eserine instilled into the conjunctival sac.

The speaker believed that the chief advantage of this operation lies in the possibility of keeping the wound perfectly free from foreign matters, including portions of the lens, capsule and iris. How often anterior and posterior synechiæ occurred, what the final visual results were, and how frequently after-operations would be required, were questions which could only be answered by extended statistics.

Report of Fifty Cases of Cataract Extraction.

BY DR. DAVID WEBSTER, OF NEW YORK.

In seventeen cases the operation was done under ether; in twenty-seven, under cocaine, and in six no anæsthetic was employed. The results were, successes, 41 cases, or 82 per cent; partial successes, 6 cases, or 12 per cent; failures, 3 cases, or 6 per cent. Aseptic precautions were used in all the operations. The best vision obtained in any case was $\frac{20}{XV}$. Dr. Webster advocated the extraction of both lenses at the same sitting in judiciously selected cases.

Dr. Webster also related the history of a case in which he had relieved the pain in a glaucoma absolutum by lacerating the infra-trochlear nerve (Badal's operation). (See July number this journal, page 174.)

Death of a Patient on the Third Day after the Extraction of a Hard Cataract.

BY DR. HENRY D. NOYES, OF NEW YORK.

On Sunday morning the operation, which was perfectly satisfactory, was performed, and the patient suddenly died the following Friday morning. After the operation a bandage was applied and the patient put to bed. The dressing was not disturbed until the third day. Everything seemed to be doing well and the patient made no complaint. On Friday morning she suddenly complained of a feeling of prostration and within half an hour she died. The only lesions found at the autopsy were dilatation of the heart and insufficiency of the valves of the left side. The death seems to have been due to heart failure. The contents of the orbit were removed *en masse*. A certain

amount of force was used and, as a consequence, the corneal wound was partially ruptured. The eye ball was hardened, and ten sections have been made which demonstrate the kind of union which we have at the end of the fifth day. Inspection of the eye before death showed that the union was smooth and apparently perfect. What is particularly interesting is that the union appears to have taken place exclusively through the medium of the epithelial layer.

Discussion.

Dr. David Webster, New York, said that the oftener he employed cocaine the more did he see the necessity of using as little as possible in cataract extraction. Some of his cases that have done badly, he thought were due to the use of too much cocaine. In his later operations he had done about as Dr. Strawbridge has recommended.

Dr. B. Joy Jeffries, Boston, had found it of decided advantage in cataract extractions, to instil cocaine into both eyes. One drop a minute or two before the operation is sufficient. It renders the well eye quiet, and the patient can keep it open without difficulty.

Dr. C. R. Agnew thought that probably the best plan to follow in the use of the cocaine is to instil a drop of the four per cent solution and hold the lids open to allow it to become diffused. Then wait three or four minutes, and then touch the eye with an instrument to ascertain whether or not the sensitiveness has been sufficiently obtunded. One or two drops are usually sufficient, and employed in this way the possibilities of evil effects are reduced to a minimum.

It has never been our custom in New York to incarcerate patients in the dark after a capital operation on the eyes.

Dr. W. F. Mittendorf, of New York, had seen two cases of serious complication after cataract, which he attributes to the use of cocaine. In one the eye was lost, and in the other it came near being lost. The cocaine solutions were fresh. but they were strong, and used free. He thought that one reason bad results are obtained is because the eye is left exposed to the

air for several minutes after the introduction of the cocaine solution. Recent observations show that the injurious action of cocaine is especially upon the epithelial layer, and in shutting off the supply of lymph fluid. The epithelium suffers very rapidly from lack of moisture, especially if the eye is kept open. It has been recommended to close the eye immediately after the introduction of cocaine. He uses a weaker solution than a two per cent, making it fresh every day, by the addition of one or two grains of cocaine to half an ounce of water. Since he had used the weak solution, and had closed the eye after its instillation, he had had no serious accident.

Dr. William Thompson, of Philadelphia, said, in regard to the efficiency of weak solutions of cocaine, that the first time he used this drug, he directed the apothecary to make a two per cent solution. Instead, he made a solution of two grains to the ounce. Three operations were performed with perfect success, and the mistake was not discovered until afterwards. Since then he had not considered it necessary to use strong solutions.

Dr. Emil Gruening, of New York, said that last summer he went to DeWecker's clinic to see him perform cataract extraction without iridectomy. He learned that he employed this method only in the winter time, the reason for this being that during the hot weather of summer, the patients were very restless, and that, as a result, prolapse of the iris frequently occurred. He decided to try the operation when he returned, and in May, 1886, performed his first operation. Half an hour before the operation he instilled a few drops of a solution of eserine (gr. ss to ℥j), and a few minutes before the operation the eye was cocainized with a four per cent solution. There was no difficulty in removing the lens. After the operation eserine was again instilled and the eye handaged. Forty-eight hours later the bandage was removed. The patient made pressure on the eyeball, the anterior chamber was emptied and the iris prolapsed. He was compelled to remove the iris. There were no further accidents. A few days later he operated on a second case, with perfect success.

In regard to the action of cocaine he referred to a case of an acute exacerbation in chronic glaucoma. The eye was very pain-

ful and hard. Intending to perform sclerotomy, a six per cent solution of cocaine was instilled. A few minutes later, on opening the lids and introducing the speculum, a bladder arose between its blades. Examination showed that this was the epithelium of the cornea which had raised. The operation was postponed, but it eventually became necessary to remove the eyeball.

Dr. H. D. Noyes, New York, stated that he had performed extraction without iridectomy in six cases. He had used cocaine, and the cleansing of the anterior chamber and the removal of lens matter had been accomplished partly by manipulation and partly by irrigation. For washing out the conjunctival sac and removing matter from the anterior chamber he used a rubber bulb, holding two or three ounces, and terminating in a short nozzle. It is not necessary to introduce a nozzle between the lips of the wound. The iris may be satisfactorily replaced by a stream of water. He had also used eserine, not as a preliminary, but as a dressing, using an ointment containing two grains of eserine to the drachm of vaseline. In three of the six cases there was perfect union with a central circular pupil and accurate vision. In one case, intra-ocular hæmorrhage came on twelve honrs after operation, but this might happen under any method. In two cases prolapse of the iris was found on the seventh day. The prolapsed iris was excised, and in one case the result was entirely satisfactory. In the second case no satisfactory vision was obtained.

The impression on his mind from this small series of cases was that while the operation deserves attention, the cases must be carefully selected. If the patient had but the one eye, he thought that he should prefer to operate on it with a preceding iridectomy. He believed a satisfactory result can be more certainly secured with iridectomy. As to the visual result, while theoretically it should be better, it is not always so.

Dr. Samuel Theobald, of Baltimore, stated that in a case where there was stricture of the nasal ducts, he invariably observed that after the instillation of cocaine, the cornea which had been clear and bright, became dull, presenting the appearance as though it had been roughly handled. He had noticed similar effects in other cases.

Dr. B. E. Fryer, Kansas City, had employed cocaine in this way, by inserting one drop every half hour until four or five drops have been used. In this way, the iris becomes completely anæsthetized, and when we wish to perform iridectomy this is important.

Dr. B. Alexander Randall, of Philadelphia, remarked that there is one point not distinctly referred to in the discussion, and that is whether or not inflammation of the iris is more frequent after this operation than where iridectomy is done. In the thirty or more cases which he saw at the clinic of Panas two years ago, there was not a single case of iritis. There were, however, several cases of prolapse. Panas claimed that there was less inflammation than after the ordinary operation. He thought that with a small iridectomy the pupil may be as movable and as central as in the operation referred to.

Some Medico-Legal Cases.

BY B. JOY JEFFRIES, M.D., BOSTON.

The author first read the law of Massachusetts in regard to the examination of R. R. employees and others for color-blindness, and stated that it was practically a dead letter and could not be enforced. In order to make it efficient, some standard must be adopted. Many instances in which the law had been evaded were given.

Dr. Charles A. Oliver, of Philadelphia, exhibited and read a description of a new series of loose wools for the scientific detection of sub-normal color perception (color-blindness).

They comprise ninety-seven bundles of Berlin worsteds composed of five (5) large principal test-skeins, twenty (20) small pure match skeins and seventy-two small confusion skeins. To each small skein there is attached a metallic bangle bearing the exact equivalence of the color's combination, tint and shade stamped upon it in a way that can be only understood by the surgeon. The colors are all of equal relative intensity. The wools are all of one manufacture, and have been dyed with vegetable materials.

The following advantages are claimed for the series. That there are five tests, that the wools are loose and all of the colors

of the same relative intensity, that each skein has its value expressed so that they can be employed by any intelligent layman; that accurate notings of color changes can be made for future comparison and proper verbal and written expression can be given, that by reason of the wools all being made of the same grade of manufacture and all the colorings obtained from vegetable dyes, no results can be gotten from the supplemental use of touch, and finally that a black surface is employed, and no definite order of testing need be pursued.

Dr. William S. Dennett, of New York, exhibited a set of Holmgren's worsteds which had been made into spheres, to each of which a number was attached. It was thought that considerable elegance and some advantage would result from using Holmgren's and Thompson's tests in this form.

Adjourned to meet in the evening at 8 o'clock.

First Day. Evening Session.

Dr. Samuel B. St. John presented a communication from Dr. Bolton, of Trinity College, to the effect that he had discovered that his grandfather, Dr. North, had founded in New London, Conn., in the spring of 1817, the first Eye Infirmary established in the United States. The communication was referred to the committee on publication. The first paper read was on the

Effect of the Electric Light Upon the Eye.

BY DR. J. A. ANDREWS, OF NEW YORK.

The injurious effect of various forms of light upon the eye were first considered, and numerous instances cited showing the harmful effect of exposure of the eyes to bright sunlight, bright lamp light and to the reflection of the sunlight from snow. Cases were given in which a short exposure to the sunlight was followed by swelling of the lids and of the conjunctiva. These symptoms yielded to sedative applications. The effects of lightning are probably due to the physico-chemical action of the electric current causing coagulation of the albumen in the crystalline lens. The opacity of the lens occurring among glass-blowers

seems to be chiefly due to the intense heat to which the eyes are exposed. The speaker had found lenticular cataract in four per cent. of glass-blowers under forty years of age, and twenty per cent in those over forty years of age whom he had examined.

In considering the relative effect of different forms of illumination that obtained from gas, from kerosene and from the incandescent electric lights were studied. The electric light gives the maximum of light with the minimum of heat. So far, the only cases of injury to the eye from the electric light have resulted from exposure in close proximity to the intense light of the arc-light. In most of these cases the existence of previous eye-trouble was not excluded. The effect in these cases can be best explained as occurring through the sympathetic nervous system rather than as a result of mechanical or chemical influences. It is not established that exposure to bright light can produce a diffused iritis. No case of injury to the eye from the incandescent light has been reported, and out of eleven hundred workers with the electric incandescent light examined by the speaker, there was not one complaint. The light used was from twelve to sixteen candles and provided with a shade to protect the eyes. The incandescent light possesses advantages which are wanting in other forms of artificial light, the principal of which are its steadiness and the fact that its use does not contaminate the atmosphere.

Discussion.

Dr. C. R. Agnew, of New York, said that the incandescent electric light had been introduced with advantage into Columbia College reading room. All who have made use of it have expressed great satisfaction with it.

Dr. W. F. Mittendorf, of New York, said that the popular feeling has been against the electric light as injurious, but his experience proved the contrary. The light is so perfect that it need not be approached so close to the eye, and the efforts of accommodation are less. On account of its steadiness, less work is thrown upon the iris than with a flickering light.

A Method of Overcoming Diplopia When Prisms are not Fully Effective.

BY WILLIAM S. LITTLE, M. D., PHILADELPHIA.

Double vision, especially in the lower field, is a source of danger in walking. This is the case even where prisms are worn, as the patient by not holding the head forward may look under the spectacle and thus see double. A case of an elderly person with modified paresis of the superior oblique was described. This had led to two severe falls. A prism of six degrees properly placed united the double images below the horizontal line. Above this plane objects are single. Myopia also existed in each eye and required the combination of a sphero-cylinder with a prism for the right eye to correct the myopia and diplopia. In order to prevent looking under the glass and seeing double in the lower field, the speaker had resorted to the following procedure. The sphero-cylinder correcting the myopia of the right eye has been ground opaque for one sixteenth of an inch above the horizontal plane, so as to obliterate sight in the lower field of vision in this eye. Then there has been attached to the lower portion of the frame the wire net-work used in protection glasses. This is carefully adjusted to fit close to the face, the perforations in the gauze having been stopped by painting. Vision is thus cut off below, and under the spectacles. In this way, vision for the affected eye is only through the upper part of the myopic correction, and the necessity for a prism is done away with. The other eye has its myopic correction and is the one in which vision in all parts of the field is clear. The right eye is only used in the upper part of the field where no diplopia exists. This is better than entirely closing the affected eye by a ground glass, and is found more effective than with the prism, as danger of falling by seeing double is prevented. The same method may be applied to a diplopia in any position in the visual field.

The spectacles were exhibited.

Two Epidemics of Molloscum Contagiosum.

BY DR. W. F. MITTENDORF, OF NEW YORK.

The contagiousness of this affection has been a matter of much

dispute. The two epidemics which had come under notice had occurred in asylums for children. In the spring of 1885 a little child having one or two small warts on the eyelid was admitted to one of these institutions. In a few weeks other children exhibited similar growths on the eye-lids, in some cases spreading to the lips and to the nose. Within three months after the admission of the first case, twenty-seven children were more or less disfigured by this affection.

In the second institution as many as forty children were affected at one time. Twenty children were sent to board with a farmer. One of these had molluscum. In a short time the affection spread to over half of the children. It also attacked the child of the farmer and his wife. In a number of cases the tumors involved other portions of the face, but they were most marked on the lids.

As soon as attention was called to the condition, energetic treatment did away with it. Excision with scissors and touching the base with nitrate of silver proved most satisfactory. Simple pressing out of the matter is more painful than excision. Unless excision is employed, the disease is apt to return.

Melano-Sarcoma of the Conjunctiva and Cornea.

BY DR. W. F. MITTENDORF, OF NEW YORK.

The patient, a married woman aged 46, came under observation August 22, 1884. In April of that year, a black spot appeared upon the lower part of the conjunctiva and was removed. When she came under observation, two other tumors had appeared. They were about the size and shape of cucumber seeds. Two or three spots looking as though ink had been dropped on the eyeball were also noted. The tumors were movable and the conjunctiva surrounding them slightly congested. Otherwise the eyeball was normal and vision almost perfect. The growths did not affect the left eye which was highly astigmatic. The patient was a strong hearty woman with no appearance of cachexia. There has been no injury to the eye and the family history was good. The pre-aural glands and those of the neck were not enlarged. The tumors were removed and the

wound in the conjunctiva brought together with sutures. Healing took place rapidly.

Four months later, she returned with two growths starting from the lower portion and the outer canthus of the same eye. There was also a small flat growth on the cornea not connected with the tumors. The tumors were again removed and the patient returned to her home.

In the spring of 1886 she again made her appearance with the eye closed. There was a small tumor the size of a cherry which had developed at the seat of the former growths. The tumor with a portion of the conjunctiva was removed. A preaural gland and some glands in the neck were found slightly enlarged. The general health remained good. She had in fact gained in weight since the previous operation.

Four or five weeks ago she again returned with another growth. The eyelids could not be separated. An incision was made and the tumor removed.

Microscopical examination showed the growth to be a sarcoma with round cells. The melanotic appearance was chiefly due to hæmorrhage in the parenchyma. Pigment granules were also present.

Discussion.

Dr. H. D. Noyes, of New York, referring to a case of melanotic sarcoma on which he operated some years ago, said that the disease had not returned.

Dr. H. Knapp, of New York, had seen a number of these cases on which he had operated as carefully as possible, but they have all after a variable period, relapsed.

Dr. B. E. Fryer, of Kansas City, presented a paper on

The Use of Hot Water in Some of the Corneal and Conjunctival Inflammations.

In this plan of treatment the water is used at as high a temperature as can be borne. After a few hours, a temperature of 140° can be tolerated. The water should not be of a lower

temperature than this, and as much higher as the patient can stand it. A method of using it is by fomentation with a napkin dipped into the hot water and not wrung out, and applied to the closed eyelids. This is continued for half an hour at a time and repeated one, two or three hours day and night. It may also be applied by suspending a vessel above the patient and allowing the water to escape through a tube, thus keeping up a continuous action of the hot water. In some cases the temperature may be raised almost to the boiling point. During the intervals between the applications, a cloth wrung out of the hot water is allowed to remain over the eyes. In some cases of purulent opthalmia, the hot water may be thrown into the conjunctival sac.

In purulent conjunctivitis this application cuts short the attack more quickly and safely than the use of ice cold water. In gonorrhœal ophthalmia, it quickly lessens the swelling and diminishes the occurrence of ulceration of the cornea. If ulceration has commenced, it is less likely to progress, and the amount of cicatricial tissue is lessened. In these cases, he occasionally uses instillations of sublimate solution or finely powdered iodoform. This plan of treatment is not so readily applied in ophthalmia neonatorum. In catarrhal conjunctivitis and phlyctenular ophthalmia, it is a good adjuvant. In acute and chronic keratitis it is useful. Its most marked effects are seen in corneal ulcer. The small amount of opaque tissue left is astonishing. The pain and photophobia are also diminished by the hot water.

In the discussion which followed, Dr. William F. Norris, of Philadelphia, said that he had had good results from the use of hot water (120°–125°) in gonorrhœal ophthalmia. It is a comfortable application, and several apparently unfavorable cases have gotten well under its use.

Dr. Samuel Theobald, of Baltimore, had not employed hot water in purulent affections of the eyes, but in interstitial keratitis and specific keratitis its use has been beneficial. He thought that it favors absorption of the opacity of the cornea. Constitutional treatment and the use of atropia of course accompanied the applications of hot water.

Asthenopia and the Changes in Refraction in Adolescent and Adult Eyes.

BY WILLIAM F. NORRIS, M. D., OF PHILADELPHIA.

The speaker first referred to the changes occurring in the shape of the eyeball at various periods of life. It is regarded by some as not necessary to correct slight errors of refraction, but the author considered their correction as of great importance when they produce asthenopia. By removing the trouble, the congestion and softening of the eye is removed, and the lengthening of its visual axis is prevented. This congestion and softening were regarded as important factors in the production of astigmatism and conical cornea.

A number of cases of diminishing hypermetropia and of hypermetropia passing into myopia were described. Diminishing hypermetropia and increasing myopia are simply different stages in a process essentially the same. They are both the result of softening of the eyeball and slow distension in the direction of the visual axis. Careful correction in these cases is one of the best means of preventing their further progress. The eyes should be carefully measured under the influence of a mydriatic. The enforced rest of the eye thus obtained, is an important aid in diminishing the congestion. During the dilatation of the pupil, dark glasses should be used even in a mild light. All cases of hypermetropia where there is a decided difference in level between the disk and the macula, should be carefully watched.

Discussion.

Dr. E. Gruening, of New York, had been much interested in one group of cases. In this, the patient on arising, has pain in the eyes with photophobia passing off in an hour or two. He is not able to fix on any object for any length of time. There is also lachrymation. With such symptoms he usually finds evidence of nasal disease. All the affections due to nasal irritation are increased by the recumbent position, for this favors congestion of the erectile tissue of the nose. It is not probable that eyes which have rested all night would manifest painful sensations, and this fact tends to exclude ordinary asthenopia in these

cases. He has treated these patients by removing the nasal trouble, and in a series of 200 cases 150 had been benefited, while the remaining fifty had passed from observation.

The meeting then adjourned.

THURSDAY, JULY 23, SECOND DAY, MORNING SESSION.

The first paper read was entitled:

THE AMBLYOPIA OF SQUINTING EYES: IS IT A DETERMINING CAUSE OR A CONSEQUENCE OF THE SQUINT?

BY S. THEOBALD, M. D., BALTIMORE.

He criticized the views of Alfred Graefe and Schweigger that the amblyopia exhibited by squinting eyes is a congenital defect and argued in favor of the older view that the amblyopia is secondary to the squint and due to mental suppression of the visual image formed in the squinting eye. He stated in the first place that it is a mistake to call this variety of amblyopia "amblyopia ex anopsia," as the amblyopia is not due simple to want of use of the squinting eye, but to an active cerebral process which induces a much more rapid loss of vision. Schweigger and Alfred Graefe, who both accept the theory of acquired retinal identity, believe that squint is often due to a non-establishment after birth of retinal identity. If this were the case, as there would be from the first no stimulus to binocular fixation, the squint ought to develop in early infancy, whereas it is rarely met with then, but usually makes its appearance about the fourth or fifth year. They both also lay stress upon the fact that some squinting eyes retain good vision for years, while others which have squinted but a short time are highly amblyopic and that this contradicts the theory that the amblyopia is produced by the squint. These observations, however, do not conflict with the suppression theory, for as the amblyopia doubtless develops during the forming stage of the squint, it is reasonable to suppose that in some cases it will have reached a high grade by the time the squint is fully established, while on the other hand, a marked difference in the refraction of the two eyes (because then the diplopia will be less annoying) will explain the retention of vision in the squinting eye.

The most convincing argument, however, in favor of the suppression theory is that the peculiar regional characteristics, which the amblyopia exhibits are of just such a nature as we should anticipate if this hypothethis be the correct one, but entirely inexplicable if we suppose the amblyopia to be a congenital defect.

Until more convincing evidence is adduced to sustain the congenital amblyopia theory, it was suggested that we ought to act upon the older theory, that the squint produced the loss of vision, and so give our patients the benefit of an early operation for the correction of this deformity.

Discussion.

Dr. H. D. Noyes did not agree with the conclusions presented in the paper. His objections were based upon an experience and careful observation for a number of years. It has been claimed that before the development of the squint such patients have had binocular vision. There is no proof of this, and the evidence is against it. He had the records of a large number of cases of monocular amblyopia, presumably of congenital origin, without lesion demonstrable by the ophthalmoscope, which had had no squint, although they may or may not have hypermetropia. Binocular fixation after operation is not infrequent, but according to his experience, binocular vision is obtained in only one-fifth of the cases. It is rare to find material improvement in an amblyopic eye after operation.

Dr. O. F. Wadsworth, of Boston, agreed with what Dr. Noyes had said. After a careful examination of this subject ten years ago, he had convinced himself that the amblyopia of squinting eyes was not due to disuse. At that time he thought that he was alone in that view, but on looking up the literature of the subject, he found that Schweigger had said the same some years before. I think that after operation there is no decided improvement in vision. It is sometimes said that there is, but this is largely due to the fact that the vision was not carefully measured before the operation.

Dr. George C. Harlan, of Philadelphia, said that in his experience, vision is not materially improved by operation. He had at times attempted to compel the patient to use the affected eye

by keeping the fixing eye under the influence of atropia for a long time. In some cases he had succeeded in improving the vision in the amblyopic eye. He recalled one case in which the vision was increased from $\frac{20}{CC}$ to $\frac{20}{L}$. Some two years later this was still retained, the axis having become straight under the use of correcting glasses.

Dr. W. F. Mittendorf, of New York, said that in those cases in which there is a central scotoma we can not expect any improvement from an operation, but there are certain cases in which vision is at once improved. This he explained by the removal of the undue pressure exerted by the internal and external recti muscles, which is different from that exerted by the superior and inferior recti. The removal of this pressure puts the eye in a more favorable condition and we should expect better vision.

Dr. Samuel Theobald, of Baltimore, regretted that Dr. Noyes was absent when the early part of his paper was read, for he had taken up the objections which he had brought forward.

In regard to the restoration of binocular vision his test has been as follows: If we cover the eye which formerly squinted, we find that there is still a balance of power in the internal rectus. If the amblyopia is not of too great a degree, the patient is directed to fix his eyes on a certain object. The squinting eye is then covered, and it at once turns in. When the covering in removed, it again turns out, showing that it did so to obtain an image upon a corresponding point of the retina. To his mind that is conclusive evidence of the restoration of binocular vision. He agreed that where there is a considerable amount of amblyopia, there is no appreciable improvement after operation, but this has no bearing upon the question whether the amblyopia is congenital, or due to suppression.

Two Cases of Severe Traumatism of the Eye with Partial Dislocation of the Crystalline Lens.

BY DR. B. ALEXANDER RANDALL, OF PHILADELPHIA.

In the first case, a man of fifty, there were three points of rupture of the sclera visible on the upper surface of the globe, with some tendency to hernia of the contents. The upper half of the

lens was in the anterior chamber in front of the iris, the lower half apparently being in nearly the normal position. It extraction was advised, but delay being asked, the operation was deferred. The lens receded under rest in bed and other appropriate measures. The scleral rupture healed, and in spite of disseminated opacities in the lens and in the vitreous, which prevented at any time a view of the eye-ground, the vision increased to about one-thirtieth of the normal. The patient has since been at work and fairly comfortable, the other eye giving no suggestion of sympathetic trouble. The injured eye shows little tendency to grow worse, although the lens is still luxated backwards.

In the second patient, a boy of twelve, the lens was less markedly luxated, but the ophthalmoscope showed two rents in the choroid,—the larger, a little outside of the macular region, the other close to the temporal margin of the optic disk. In connection with the latter there was a reddish area of choroid, embracing the upper and inner border of the disk, where the force had apparently been insufficient to rupture the membrane, but had given it a twist causing its inflammation and subsequent atrophy. The case progressed to an excellent recovery. The vision which had been lost improved to $\frac{6}{XII}$ +m, and the accommodation to the extent of some five dioptries. The choroid rents healed with little but pigmentation to mark their sites. The eye which had shown a high degree of myopic astigmatism, probably by reason of the dislocation and rotation of the lens, returned to the approximately emmetropic condition of the other eye.

The early and late appearance of the eye ground were illustrated by colored sketches.

The next paper, by Dr. Prout, was on "Badal's Operation — Laceration of the Inner-Trochlear Nerve for the Relief of Glaucoma, etc., with Cases."—[See this JOURNAL July, page 165, etc.]

DISCUSSION.

Dr. C. S. Bull, of New York, stated that where he had performed the operation for the relief of pain in glaucoma or ciliary neuralgia, while the relief was marked immediately after

the operation, it was temporary only, and in every case returned.

H. KNAPP, M. D., New York, read a paper on

ADVANCEMENT OF TENON'S CAPSULE IN STRABISMUS.

This operation was devised by deWecker, five years ago, who performed it in the following manner: A piece of the conjunctiva five millimetres long and ten millimetres high is detached from the region of the insertion of the tendon as a centre, leaving a small band near the cornea. Tenon's capsule is now incised near the insertion of the tendon and loosened along side of and under the muscle. The capsule is then stitched forward by two sutures, entering through the conjunctiva to the capsule at the lower and upper edges of the muscle, and coming out in the conjunctiva above and below the cornea. The greater the piece of capsule loosened and stitched forward, the greater the effect. If the effect appear too great, the stitches are removed the next day. If not they are allowed to remain four or five days. De Wecker used capsular advancement for cases of insufficiency, to strengthen the weak muscle, for high degrees of strabismus both convergent and divergent.

Dr. Knapp, during the present summer had done the operation ten times. His operation differed from that above described in leaving a broader conjunctival flap, and in using a third middle suture. His intention was to advance the whole anterior portion of the vertically folded muscle and the capsule, and produce plastic inflammation which through subsequent cicatrization, would shorten the parts. The operation was performed in two cases of convergent strabismus due to paralysis of the external rectus. In these cases the operation caused decided improvement. The eyes could be approached to within two millimetres of the outer commissure. The formerly paralyzed external muscle had gained a considerable degree of power. The operation was performed on two cases in which former tenotomies had not overcome the difficulty. The operation was followed by improvement in both cases. In six cases the operation was performed for convergent strabismus of high degree with considerable amblyopia. The results have all been good.

In none of the cases has there been any alarming reaction, although there was for some weeks redness and swelling in the region of the advanced capsule. At first Dr. K. had used catgut sutures, but one gave way on one occasion and since then he has employed black silk sutures. Antiseptic precautions have been employed in all cases. The speaker preferred advancement of Tenon's capsule to simple advancement of the tendon, because the operation is simpler and attended with less risk. The preservation of the natural attachment exposes the muscle less to inflammation and there can be no undue retraction in case of failure. His experience with limited advancement of Tenon's capsule has been quite encouraging.

Discussion.

Dr. George C. Harlan, of Philadelphia, asked if Dr. Knapp, considered this a safe operation? Four or five years ago, he had performed the operation a number of times and was much pleased with it until he had a case of panophthalmitis.

Dr. H. Knapp, in reply, said that a year ago he considered it a dangerous operation, but his views have changed considerably since then. Under antiseptic precautions, the danger is much lessened. Where suppuration occurs within the first twenty-four hours, it is certainly the result of infection, and not due to the traumatism alone.

A Case of Tumor of the Left Occipital Lobe.

BY DR. EMIL GRUENING, OF NEW YORK.

The chief interest of the case lay in the fact that the disease of the brain was localized by the existence of homonymous hemianopsia. Diagrams showing the course of the optic fibres were shown. At the autopsy a hard mass was found in the left occipital lobe, and the whole cortex of this lobe was destroyed.

New Formation in the Vitreous of Both Eyes.

BY DR. J. S. PROUT, OF BROOKLYN.

The patient was a young man, aged 16. He had never had any trouble with the eyes. In the right eye there is a body arching forward. There is no evidence of any relation to the papilla. The speaker thought that it was, in all probability, a remnant of the fœtal circulation of the vitreous. In the left eye

there was a similar body. Drawings showing the appearance presented were exhibited.

Dr. Edward Jackson, of Philadelphia, presented a Lens Series for the Refraction Ophthalmoscope.

Dr. John Green, of St. Louis, exhibited and described a new series of Test Letters.

Dr. Charles A. Oliver, of Philadelphia, presented a Set of Metric Test Letters and Words for determining the amount and range of accommodation. They are made of six sizes of differently arranged words, each word containing three or four of the seven letters, O D E T O L F. Each letter is made in exact conformation with the Snellen basis. The adoption of such a series puts the determination of the acuteness of vision and of accommodation upon an uniform basis.

A Case of Retinitis Albuminurica—Induced Premature Labor.

BY DR. S. D. RISLEY, OF PHILADELPHIA.

The patient, the wife of a physician, was seen September 24, 1884. She was between the fourth and fifth month of pregnancy. She had suffered with headache and giddiness. The urine had been examined a week previously and no albumen was found. At this time there was marked disturbance of vision. In a previous pregnancy she had had albuminuria, but no trouble with sight. In a second pregnancy there had been no trouble.

The ophthalmoscope showed albuminuric retinitis of both eyes. The urine contained a large quantity of albumen. After standing two days, the albumen constituted four-fifths of the entire contents of the test tube. After consultation with her husband and Dr. William Goodell, the induction of abortion was advised, but to this the patient positively refused to consent. Finally, after consultation with her clergyman, she consented.

Labor was induced, and she was delivered of a fœtus at five months. She then passed into an unconscious condition in which she remained four days. There were no convulsions. As consciousness gradually returned, evidences of right-sided hemiplegia with aphasia were noted. The quantity of albumen gradually diminished. Six months later the lady was able to return to the office. There were still some traces of aphasia. Vision was greatly improved.

The object in reporting the case was to put on record an additional experience in the management of a condition presenting so many serious considerations.

Dr. B. Alexander Randall exhibited a modification of the Loring ophthalmoscope, which consisted in adding a series of cylinders from .25 D to 4 D.

The Frequent Instillation of a Two Per Cent Solution of Nitrate of Silver in Purulent Ophthalmia.

BY J. A. ANDREWS, OF NEW YORK.

He had employed this method in twenty-five cases of gonorrhœal ophthalmia, and the eyes were seriously damaged in none of them. The cases were all severe, with much discharge, chemosis and swelling of the lids. The applications were repeated usually three times a day; sometimes as often as five times per day. The use of the nitrate of silver is graduated to the amount of hyperæmia, and especially to the amount of swelling of the lids. If this is marked, he did not fear to repeat the instillations frequently.

Dr. Russell Murdoch, of Baltimore, exhibited an impervious covering for the sponge in the administration of ether.

Measurement of Astigmatism by the Ophthalometer of Javal and Schiotz.

BY DR. H. D. NOYES, OF NEW YORK.

The instrument is useful for purposes of rapid determination, for confirmation, and, in doubtful cases, for diagnosis.

Dr. H. D. Noyes also read the following papers (by title):

Burns of the Eye by Fulminate of Silver and Fulminate of Mercury.

Case of Foreign Body in the Globe, including Two Cases of Spontaneous Extrusion.

The officers for the ensuing year are as follows:

President, Dr. William F. Norris, of Philadelphia;

Vice-President, Dr. Hasket Derby, of Boston;

Secretary and Treasurer, Dr. O. F. Wadsworth, of Boston;

Corresponding Secretary, Dr. J. S. Prout, of Brooklyn.

The next meeting will be held at the Pequot House, New London, Conn., on the third Wednesday of July, 1887.

CORRESPONDENCE.

ADOLF ALT, M. D.,

DEAR DOCTOR: — I have been too ill to look carefully at my article in the August number of your valuable journal.

Please publish the following, if you feel it is necessary.

At page 221, the last paragraph, the solution of the action of the glasses is not correctly stated. It reads that on placing in the holder of the prisoptometer, a +D7. spheric, in the case given of hyperopia = +D1.0, there will be induced D7. of artificial myopia. This is incorrect, for in this case, not D7., but D6. of artificial myopia will result, the remainder of +D7., viz., +D1. positively correcting the D1. of hyperopia. Hence when the —D6. spheric is applied behind the +7D., it corrects the 6D. of artificial myopia, and the +D1. of the +7D. corrects the hyperopia, and now the images are tangent and upon the retina. Rule I. (see page 222) is hence practically correct.

Again, on page 222, 4th paragraph from the top, while the conclusion is correct, the solution is not true. In the example given there is not D7.5. of artificial myopia induced by adding the +D7. spheric in the instrument, but only D6. of artificial myopia. In the case given D0.5 of manifest or spasmodic myopia. If this be corrected with —D0.5 spheric, then the images of the instrument will be tangent upon the retina. Leaving this glass in, and adding +D7. there will be induced 6D. of artificial myopia and D1. of the +D7. will positively correct the D1. of hypermetropia, which has been shown to be present by duboisine. Finally adding —D6. spheric over the two glasses already employed, the D6. of artificial myopia will be corrected and the circles tangent. But suppose we do not correct the spasmodic myopia preliminarily =—D0.5, and apply at once the +7.D. and then the —6. 5 D. the result will be the same. The

last D6.5 glass will correct —6D. of artificial myopia, and also the —D0.5. of spasmodic myopia, and leave now +7D— (—6.5) =+D0.5 hyperopia corrected. But in this case and similar ones, this spasmodic myopia (—0.5D.) is but a concealment of hyperemetropia equal in degree to the negative ametropia from spasm, or, in this example, —D0.5, This quantity, therefore, should be considered as positive and added to the +D0.5 H. already found, or +D0.5+ (+0.5) =+D1.0 hyperopia.

Rule II. (page 222) although practically correct can be rendered better thus:

Rule II. From +D7. deduct the negative spheric which causes the "object circles" to touch, and to the remainder add the manifest or spasmodic myopia as a + quantity. Thus, +D7.— (—6.5) =+D0.5.+ (+0.5 spasmodic myopia) =+D1.0H.

So too, Page 222, last paragraph, under "case third," of manifest and latent H., the true solution is as follows: Manifest H=+D0.5. + latent H=+D0.5= total H=+D1.0. Apply now +D7. and there will be induced +D7.— (+D1.) =D6. of artificial myopia, the +D1. of the +D7. correcting the total H. Adding now the —D6. the circles are seen together, and the artificial myopia =—6D. is corrected.

Rule III. does not need to be changed.

Very respectfully, H. CULBERTSON.

Zanesville, O.

EDITORIAL NOTICE.

In the article of Dr. Fox and Mr. Gould in our September issue, page 251, a disagreeable error has occurred. Please notice that the four lines dropped in between the annotations should appear after the fourteenth line from above and before what is now the fifteenth line.